

Utah Department of Agriculture and Food (UDAF) Policy on the Asian Tapeworm of Fish
May 1997

Whereas the Asian tapeworm (*Bothriocephalus acheilognathi*) constitutes a significant potential threat to the fishes of Utah and is listed on the prohibited pathogen list, its entry into and spread within the state are prohibited. The intrastate and interstate movement of live fish which are known or potential carriers of the parasite may only occur under certain prescribed conditions, which include shipment as non-feeding sac fry, movement following adequate negative testing, or movement after approved treatment. This policy applies to those susceptible North American species that are members of the cyprinoid, centrarchid, and poeciliid families. The Department of Agriculture and Food may apply this policy to other species if future research or disease work warrants it.

Testing:

Adequate testing is the examination of the anterior 1/3 of the intestinal tract of the suspect fish for the presence of the parasite. Testing must be done on a sufficient number of fish from each facility water source to provide for 5% carrier incidence at 95% confidence level (usually 60 fish). This would be done for each separate water supply at a production facility on an annual basis or for each purchased lot of fish at a broker facility. Testing must be accomplished by a recognized fish health inspector or fish pathologist and the results documented in writing to the Utah Department of Agriculture and Food, Fish Health Program office prior to movement or issuance of an entry permit.

Treatment:

In those cases where either small numbers of fish exist, fish are of very high value, or where threatened and endangered species are involved, treatment of each shipment is required. Treatment with Praziquantel (Droncit) has proven to be highly effective when adequate dosage and time are used. This is an extra label use of the drug; so to legally protect the owner, the compound should be used under the supervision and documentation of a licensed veterinarian. Treatment is to be done within two (2) weeks of shipment. Following is the prescribed treatment regime and minimum veterinary involvement.

- < Use 56.8 mg/ml Praziquantel (Droncit, Bayvet Div., Cutter Lab.) with a **final minimum concentration of 0.67 ppm in the treatment water** (1.0 ml of injectable Droncit in 20 gallons of water equals 0.75 ppm).
- < To obtain better mixing, add the Droncit to approximately 200 ml of isopropyl alcohol before adding it to the treatment water.
- < Maintain fish densities in the treatment water **no greater than 69 gm of fish/ liter of water (11-2 pounds of fish/20 gallons)**. Higher densities negate treatment efficiency.
- < Aerate the water during treatment.
- < Treat fish for a **minimum of 24 hours**.
- < At 24 hours, filter and exchange the treatment water with fresh clean water. Filtration is necessary because treatment may not kill the eggs in the expelled proglottids.
- < Discard the filtered worm parts appropriately so as not to spread the pathogen (autoclave, etc.).
- < Continue to hold the fish in clean aerated water for an additional 48 hours (total treatment time of 72 hours)

- < At the end of this period, filter and replace the holding water. Replacement water must not contain the intermediate host. Discard the filtered worm parts as above.
- < Following treatment, hold or transport fish in a decontaminated container in clean water that doesn't contain the copepod intermediate host, worm eggs, or proglottids.
- < Signed statement that the fish are **NOT** intended for human consumption.

Minimum Veterinary Involvement: This drug must be used by a licensed veterinarian under the Aextra label® use.

- < Procure the Droncit (injectable form easier to work with).
- < Assure appropriate dose based on the volume of water and the weight of the fish (be sure the density recommendations are not exceeded and the final concentration is at least 0.67 ppm).
- < Observe and document the beginning of the treatment.
- < Be present at the end of the first 24 hours to verify filtration and exchange of water.
- < Be present at the end of the total 72 hour period to certify that treatment was completed properly.
- < Sign the form *Utah Notice of Treatment for Asian Tapeworm* **OR** *Notice of Testing for Asian Tapeworm*.

Pond Treatment:

Where feasible and practical, infected ponds should be treated to eliminate the parasite and copepod intermediate host. Infected fish should be removed and either destroyed or treated. If the fish are treated, they should be placed in a holding area with water that does not contain the copepod intermediate host. The pond is then drained and dried (18-20 degrees C) and disinfected with unslaked or chlorinated lime. Exposure to winter conditions also destroys the parasite eggs and intermediate host. After treatment of the pond, only certified tapeworm-free fish should be used.